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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHEVALIER, ALICIA ANN

ART UNIT

PAPER NUMBER

1783

MAIL DATE

DELIVERY MODE

10/27/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/765,707	Applicant(s) WELLMAN ET AL.	
	Examiner ALICIA CHEVALIER	Art Unit 1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15,28,31-34,36-54 and 57-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15,28,31-34,36-54 and 57-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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RESPONSE TO AMENDMENT

1. In view of the Appeal Brief filed on August 9, 2010, PROSECUTION IS HEREBY REOPENED. New grounds of rejections are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1783

2. Claims 15, 28, 31-34, 36-54 and 57-61 are pending in the application, claims 1-14, 16-27, 29, 30, 35, 55, 56 and 62 have been cancelled.

WITHDRAWN REJECTIONS

3. The double patenting rejection of claim 61, made of record in the office action mailed December 8, 2009, page 2, paragraph #4 has been withdrawn due to Applicant's amendment in the response filed May 7, 2010.

4. The 35 U.S.C. §103 rejections made of record in the office action mailed December 8, 2009, pages 3-11, paragraphs #7-#10 has been withdrawn due to Applicant's arguments in the Appeal Brief filed August 9, 2010.

REJECTIONS

5. **The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

Claim Rejections - 35 USC § 112

6. Claim 61 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the instant case claim 61 contain(s) the limitation "wherein the apertures are only in the curved section." The specification does not disclose that the apertures are excluded from other sections, therefore this limitation is considered new matter.

Any negative limitation or exclusionary proviso must have basis in the original disclosure. See *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), aff'd mem., 738 F.2d 453 (Fed. Cir. 1984). The mere absence of a positive recitation is not basis for an exclusion. Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112, first

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paragraph as failing to comply with the written description requirement. MPEP § 2173.05(i)

The new matter must be deleted.

Claim Rejections - 35 USC § 103

7. Claims 15, 28, 33, 34, 36-39, 41, 44, 46-54, 59-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Vliet (U.S. Patent No. 4,099,749) in view of Shea (U.S. Patent No. 5,383,994), Jacobson et al. (U.S. Patent 6,213,522) and Thomas (U.S. Patent No. 4,669,177).

Regarding Applicant's claims 15, 36, 60 and 61, van Vliet discloses a duct assembly (*figure 1 and col. 1, lines 5-16*) comprising a slip collar (*ref. #2, figure 1*) comprising (i) a tubular outer wall portion, (ii) a tubular inner wall portion, (iii) an intermediate portion disposed between the tubular outer wall portion and the tubular inner wall portion, (iv) a first slot region defined by the tubular outer wall portion and the tubular inner wall portion, and (v) a second slot region defined by the tubular outer wall portion and the tubular inner wall portion (*ref. #2, figure 1*). The first and second slot regions face away from each other and the slip collar is an integral, one-piece structure (*ref. #2, figure 1*). The assembly further comprising a first duct including a first end inserted into the first slot region and a second duct including a second end inserted into the second slot region (*ref. #1, figure 1*). The first end inserted into the first slot region and the second end inserted into the second slot region each have a constant diameter (*figure 1*).

van Vliet fails to disclose that each of the tubular outer wall portion, the tubular inner wall portion, and the intermediate portion in the slip collar comprises a fiber reinforced plastic material or that the first and second ducts also comprise a fiber reinforced plastic material.

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Shea teaches that fiberglass reinforced plastics are preferred in the formation of air channel systems (*col. 1, lines 44-47*). One of ordinary skill in the art would have recognized that duct joints and ducts themselves are made completely from fiberglass reinforced plastics because it is well known that fiber reinforced ducts are lighter than metal ducts and are a preferred material for air duct systems, as taught by Shea.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select a fiberglass reinforced plastic material for the coupling sleeve and ducts of van Vliet in order to provide a fire resistant duct assembly that is lighter in weight, as taught by Shea.

van Vliet further fails to disclose that the tubular wall outer portion includes a curved section including apertures, and wherein screws are disposed in the apertures.

Jacobson et al. teach that slip collars comprise teeth-like projections to provide mechanical securement for an inserted duct work (*col. 3, lines 19-21*) and additional apertures on a curved section and wherein screws are disposed in the apertures to provide additional strength once the duct work is assembled (*col. 2, lines 30-34 and col. 3, lines 22-23*). The apertures are positioned in pairs comprising a first aperture and second aperture for each pair (*col. 2, lines 30-34*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to add apertures with screws to the curved section to the device of van Vliet in order to provide additional strength once the duct work was assembled, as taught by Jacobson.

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The combination of van Vliet and Jacobson et al. fail to disclose the screws are set screws.

Thomas teaches a coupling sleeve for pipes (*title and abstract*) which uses set screws and/or adhesive to attach the sleeve to the pipe to prevent lateral movement (*abstract and col. 4, lines 1-3*). It is well established in the art that set screws provide securing means where the head of the screw is not exposed at the surface, thereby providing a smooth surface absent of protrusions.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select set screws for the coupling sleeve of van Vliet, as taught by Thomas, in order to avoid having protrusions snag near by objections.

Regarding claims 28, 33, 34, 37, 41 and 44, van Vliet fails to teach that the outer wall portion and inner wall portion comprise different polymeric materials. However, Shea teaches that two major problems are faced when using fiberglass reinforced plastic materials and not any metal in duct systems including fire resistance and chemical resistance. Shea goes on to teach that in order to overcome these issues the ducts are formed having an inner wall portion and outer wall portion in the same manner as the van Vliet duct joint assembly. Shea teaches that the matrix used to form the outer wall portion is a phenol resorcinol type fire retardant resin and the inner tubular wall portion is formed of a vinyl ester (*col. 3, lines 9-15*). One of ordinary skill in the art also would have recognized that the ducts as well as the joints require a fire resistant outer portion and chemical resistant inner portion in order to function adequately as a duct assembly, as taught by Shea.

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Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select a fiberglass reinforced phenol resorcinol material for the outer tubular portion of van Vliet in order to provide a fire resistant outer portion that is lighter in weight, as taught by Shea, and to use vinyl ester as the resin in the fiberglass reinforced material in the inner portion of the duct joint of van Vliet, in order to provide chemical resistance, as taught by Shea. Thus, the slip collar of van Vliet and Shea combined is free of metal.

Regarding claim 38, van Vliet teaches that the coupling sleeve can be used as an end cap in which it would be obvious that the sleeve would contain only one slot region (*col. 2, lines 39-40*).

Regarding claim 39, van Vliet teaches the tubular inner wall portion is shorter than the tubular outer wall portion (*ref.# 3, Figure 4*).

Regarding claim 46, van Vliet teaches the slip collar is formed first and after the slip collar is formed the first end of the duct is inserted into the first slot region and the second end of the second duct is inserted into the second slot region (*col. 1, lines 19-33*).

Regarding claim 47, van Vliet teaches the slip collar is formed first and after the slip collar is formed the first end of the duct is inserted into the first slot region and the second end of the second duct is inserted into the second slot region (*col. 1, lines 19-33*).

Regarding claims 48-51, the claims are written as product by process claims and only the structure taught by the product is given patentable weight. When an article made by a different process is found to be substantially the same, the burden is shifted to the applicant to show an

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unobvious difference. To show an unobvious difference applicant must provide evidence such as unexpected results provided by forming the article with the different process.

Regarding claim 52, van Vliet teaches the interior surface of the tubular outer wall portion and the surface of the tubular inner wall surface facing the slot region are smooth (*Figure 1*).

Regarding claim 53, Shea teaches that the fibers may include graphite, carbon, or ceramic to provide to provide increased strength and fire resistivity (*col. 5, lines 27-29*).

Regarding claim 54, van Vliet teaches the slip collar is curved (*Figure 4*).

Regarding claim 59, van Vliet fails to disclose the claimed thickness of the inner wall portion. However, where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges in thickness involves only routine skill in the art. MPEP 2144.05.

8. Claims 31, 32, 42, 43, 57, 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Vliet (U.S. Patent No. 4,099,749) in view of Shea (U.S. Patent No. 5,383,994), Jacobson et al. (U.S. Patent 6,213,522) and Thomas (U.S. Patent No. 4,669,177) as applied to claim 36 above, and further in view of Williams et al (U.S. Patent No. 5,961,154).

Regarding claims 42, 43, 57 and 58, Van Vliet, Shea, Jacobson et al. and Thomas teach all that is claimed in claims 15 and 36 as presented above, but fail to teach that the assembly further comprising an adhesive between the slip collar and the duct, and around the set screws and in the slot region. However, Williams et al teach that slip collars are formed with screws and/or adhesive compositions applied in the slot regions comprised of novalac or epoxy resin

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(*col. 4, lines 2-4*) of the slip collar to provide additional connection strength between the ducts and the coupling device (*ref. #94, Figure 7 and ref.# 38, Figure 1*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to adhesive composition such as novalac or epoxy resin to the slot regions and around the set screws of the coupling device of van Vliet in order to add additional connection strength between the ducts and coupling device, as taught by Williams et al.

Regarding claims 31-32, van Vliet fails to teach the thickness of the outer wall portion of the coupling sleeve, but Williams et al teaches that thickness within the claimed range of 3/16-inch to about 1-1/2 inches are common in forming coupling sleeves for air ducts (*col.7, l.18-24*).

9. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over van Vliet (U.S. Patent No. 4,099,749) in view of Shea (U.S. Patent No. 5,383,994), Jacobson et al. (U.S. Patent 6,213,522) and Thomas (U.S. Patent No. 4,669,177) as applied to claim 36 above, and further in view of Nishio (U.S. Patent No. 6,045,164).

Van Vliet, Shea, Jacobson et al. and Thomas teach all that is claimed in claim 36 as presented above, but fail to teach that the tubular inner wall portion comprises a fluoropolymer material. However, Nishio teaches that fluoropolymers such as polytetrafluoroethylene are superior in resistance to chemicals and heat (*col. 4, lines 43-53*). One of ordinary skill in the art would have recognized that fluoropolymers that are superior in resistance to chemicals and heat would be beneficial in use in forming the chemical resistant portion of a fume duct joint. One of ordinary skill in the art would have also recognized that van Vliet, Shea, and Nishio are

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analogous insofar as both references are concerned with joints between tubular articles made of resins that require chemical resistance.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to form the tubular inner wall portion of van Vliet so that it includes a fluoropolymer material since Nishio teaches that fluoropolymers are well known in the art of tube joints and connectors to be chemical and heat resistant.

10. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over van Vliet (U.S. Patent No. 4,099,749) in view of Shea (U.S. Patent No. 5,383,994), Jacobson et al. (U.S. Patent 6,213,522) and Thomas (U.S. Patent No. 4,669,177) as applied to claim 36 above, and further in view of Narukawa et al (U.S. Patent No. 4,433,020).

Van Vliet, Shea, Jacobson et al. and Thomas teach all that is claimed in claim 36 as presented above, but fail to teach that the fiberglass reinforced plastic material comprises chopped strand mat. However, Narukawa et al teach that when forming fiberglass reinforced plastics in the formation of exhaust ducts the glass fibers are prepared from chopped strands (*col.1, lines 8-12, col.2, lines 55-56, and col.8, lines 25-30 and 55-59*). Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to form fiberglass reinforced plastics used in the formation of ducts from chopped strands, as taught by Narukawa et al.

Thus, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to form the fiberglass reinforced slip collar of van Vliet and Shea from chopped strands because they are a common method of forming fiberglass reinforced

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plastics for use in the formation of ducts, in which the slip collar is used, as taught by Narukawa et al.

ANSWERS TO APPLICANT'S ARGUMENTS

11. Applicant's arguments in the appeal brief, filed September 22, 2010, regarding the previous rejections of record have been considered but are moot since the rejections have been withdrawn.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (571) 272-1490. The examiner can normally be reached on Monday through Thursday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alicia Chevalier/
Primary Examiner, Art Unit 1783
10/26/2010